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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/619,886	07/15/2003	Stephen R. Carter	1565.055US1	7457

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EXAMINER	
DOAN, DUYEN MY	

ART UNIT	PAPER NUMBER
2452	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/619,886	CARTER, STEPHEN R.	
	Examiner	Art Unit	
	DUYEN DOAN	2452	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 December 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 July 2008* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/30/2008 has been entered. Claims 1-19 are amended for examination. Claims 20-25 are cancelled.

Response to Arguments

Applicant's arguments with respect to claims 1-19 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 15-19 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 15 recites a system containing routing table, polices, routing module, the system is process by at least one of cache accelerator, router...customized application. Since the claim does not have any physical-parts associated with the claimed system, therefore, the system being claimed is software per se which does not fall under any of the statutory categories defined

under § 101. Software per se is not a useful process, a machine, a manufacture, or a composition of matter. Therefore claim 15 and its dependent claims are directed towards non- statutory subject matter.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-9, 11-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cain (us pat 6,857,026) and Ash et al (us pat 6,590,867) (hereinafter Ash) and further in view of Narvaez-Guarnieri et al (us pat 6,347,078) (hereinafter Nar)

As regarding claim 1, Cain discloses a method for dynamically routing a data packet through a Content Distribution Network (CDN), comprising:

receiving a routing table for a CDN (see Cain col.1, lines 66-67; col.2, lines 1-2, install multiple routes in the routing table, the routing table is inherently receive by the node originally) and a data packet (see Cain col.2, lines 2-3, receive the message), wherein the routing table represents a desired path and alternative paths through the CDN (see col.3, lines 15-20, preferred route and one or more alternate routes), and

wherein each path represents links, between an entry node, intermediate nodes, and a destination node (see Cain figure.I, links 110, 116 etc.,);

reordering currently available intermediate nodes within the routing table for the currently available links, by current conditions of the currently available intermediate nodes (see Cain co1.3, lines 38-49, re-prioritize the available routes in the routing table if a condition such as node failure occurs, the re-prioritizing available routes inherently re-prioritize available intermediate node since, the different routes may have different intermediate nodes); and

routing the data packet to a next available intermediate node of the routing table, wherein the next available intermediate node is one of the currently available intermediate nodes, and wherein at leas tone intermediate node selects the next available intermediate node that is associated with one of the alternative path (see Cain col.3, lines 45-49, route the message using alternate route; col.4, lines 12-45, selecting another route (alternate route) to route data if primary route fail).

Cain does not specifically teach evaluating policies associated with currently available links for currently available paths at the entry node or at one of the intermediate nodes, when the data packet is received on the entry node and when data packet is received on each of the intermediate nodes, the policies are executable statements processed at each of the intermediate nodes.

Ash teaches evaluating policies associated with currently available links for currently available paths when the packet receive at entry node (see Ash col.2, lines 65-

67 to col.3, lines 1-5, receive the packets select routes based the load state of the links in the network; also see col.5, lines 15-23, lines 41-55 determining the links having the bandwidth capacity for the determine class of service, the recipient router such as router 12-1, to 12-3 using the same policy to determine the route in the network).

Nar teaches calculate and selects the next hop for forwarding packet based on criteria such as network load at each of the router when the data packet is received on the entry node and when data packet is received on each of the intermediate nodes (see Nar col.4, lines 56-67; col.5, lines 1-8, each router calculate and selects the next hop for forwarding packet based on criteria such as network load); the policies are executable statements processed at each of the intermediate nodes (see Nar col.4, lines 56-67, when the router calculate and select the available next hop, the router using the SPT algorithm and criteria such as network load, the router implement the SPT algorithm and the criteria, the SPT algorithm and the criteria are executable).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to combine the teaching of Ash and Nar to the method of Cain because they are analogous arts. A person would have been motivated at the time the invention was made to add the evaluating the calculating and selecting next hop at each router of Ash and Nar to the invention of Cain for the purpose providing a more efficient routing method by allowing each router to chose the routing decision locally.

As regarding claim 2, Cain-Ash-Nar discloses iterating the processing for evaluating, reordering, and routing at each intermediate node that receives the data

packet until the data packet reaches the destination node (see Nar, col.2, lines 65-67). The same motivation was utilized in claim 1 applied equally well to claim 2.

As regarding claim 3, Cain-Ash-Nar discloses comparing policy threshold metrics to the currently available intermediate nodes' processing load levels for determining whether to trigger actions associated with the policy threshold metrics (see Ash col.5, lines 6-23) for the purpose of satisfying the quality objectives for different grades of service (see Ash co1.1, lines 45-48).

As regarding claim 4, Cain-Ash-Nar discloses processing one of the actions to promote or demote one or more of the currently available intermediate nodes within the routing table (see Cain co1.3, lines 38-49, re-prioritize the available routes in the routing table if a condition such as node failure occurs, the re-prioritizing available routes inherently re-prioritize available intermediate node since, the different routes may have different intermediate nodes).

As regarding claim 5, Cain-Ash-Nar discloses comparing policy priority metrics to the currently available intermediate nodes' data traffic for determining whether to trigger actions associated with the policy priority metrics (see Ash col.5, lines 15-23 checking the bandwidth capacity to see if it complies with the class of service). The same motivation was utilized in claim 3 applied equally well to claim 5.

As regarding claim 6, Cain-Ash-Nar discloses processing one of the actions for suspending existing traffic associated with one of the currently available nodes in order to accommodate the routing of the data packet based on the policy priority metrics

associated with the data packet (see Cain col.3, lines 38-49, re-prioritize the available routes in the routing table if a condition such as node failure occurs).

As regarding claim 7, Cain-Ash-Nar discloses comparing policy bandwidth utilization metrics against existing bandwidth utilization levels associated with the currently available intermediate nodes for determining whether to trigger bandwidth utilization in order to load balance bandwidth use within the CDN (see Ash col.5, lines 15- 23 checking the bandwidth capacity to see if it complies with the class of service). The same motivation was utilized in claim 3 applied equally well to claim 7.

As regarding claim 8, Cain discloses a method for dynamically a data packet routing through a Content Distribution Network (CDN), comprising:

the routing table includes a desired path and one or more alternative paths (see col.3, lines 15-20, preferred route and one or more alternate routes), and wherein each path includes links between an entry node, intermediate nodes, and a destination node (see Cain figure.I, links 110, 116 etc.,);

reordering, at the receiving node, next available intermediate nodes within the routing table when the network condition is triggered to change routing from the desired path to one of the alternative paths (see Cain co1.3, lines 38-49, re-prioritize the available routes in the routing table if a condition such as node failure occurs, the re-prioritizing available routes inherently re-prioritize available intermediate node since, the different routes may have different intermediate nodes).

Cain does not clearly disclose associating policies with a routing table, evaluating, at a receiving node identified in the routing table, the policies when the receiving node acquires a data packet, and wherein the receiving node is one of the intermediate nodes, and wherein the policies are executable statements processed at of the receiving node

Ash teaches associating policies with a routing table, evaluating, at a receiving node identified in the routing table, the policies when the receiving node acquires a data packet (see Ash col.2, lines 65-67 to col.3, lines 1-5, receive the packets select routes based the load state of the links in the network; also see col.5, lines 15-23, lines 41-55 determining the links having the bandwidth capacity for the determine class of service, the recipient router such as router 12-1, to 12-3 using the same policy to determine the route in the network).

Nar teaches and wherein the receiving node is one of the intermediate nodes, and wherein the policies are executable statements processed at of the receiving node (see Nar col.4, lines 56-67, when the router calculate and select the available next hop, the router using the SPT algorithm and criteria such as network load, the router implement the SPT algorithm and the criteria, the SPT algorithm and the criteria are executable).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to combine the teaching of As and Nar to the method of Cain because they are analogous arts. A person would have been motivated at the time the

invention was made to add the evaluating the calculating and selecting next hop at each router of Ash and Nar to the invention of Cain for the purpose providing a more efficient routing method by allowing each router to chose the routing decision locally.

As regarding claim 9, Cain-Ash-Nar discloses identifying the entry node as an initial receiving node (see Cain co1.2, lines 2-3, also see figure 1, node A).

As regarding claim 11, Cain-Ash-Nar discloses using policies associated with at least one of next intermediate node bandwidth utilization levels, next intermediate node utilization levels, and next intermediate node traffic priority assignments (see Cain col.4, lines 20-25).

As regarding claim 12, Cain-Ash-Nar discloses assigning the policies to the links established between the nodes and forming the desired path and the one or more alternative paths (see Nar col.4, lines 56-67). The same motivation was utilized in claim 1 applied equally well to claim 12.

As regarding claim 13, Cain-Ash-Nar discloses preventing previously demoted intermediate nodes from being promoted at the receiving node when reordering of the routing table occurs (see Cain col.3, lines 37-48, also Nar col.3, lines 5-8). The same motivation was utilized in claim 8 applied equally well to claim 13.

As regarding claim 14, Cain-Ash-Nar discloses using a formal notation to update the routing table or the policies in order to identify the previously demoted intermediate nodes (see Cain co1.3, lines 37-48, se Nar col.3, lines 5-8). The same motivation was utilized in claim 8 applied equally well to claim 13.

As regarding claim 15, Cain discloses a system for dynamically routing a data packet through a Content Distribution Network, comprising:

a routing table including a desired path and one or more alternative paths, wherein each path includes links from an entry node through intermediate nodes to a destination node (see col.3, lines 15-20, preferred route and one or more alternate routes, Cain figure.1, links 110, 116);

wherein the routing module reorders currently available intermediate nodes associated with the currently available links within the routing table when the conditions of nodes are triggered (see Cain co1.3, lines 38-49, re-prioritize the available routes in the routing table if a condition such as node failure occurs, the re-prioritizing available routes inherently re-prioritize available intermediate node since, the different routes may have different intermediate nodes);

wherein the system is processed by at least one of a cache accelerator, a router, a gateway, a firewall, a network hub, a network switch, a network bridge, or a customized application, and wherein the routing module processes on the entry node, the intermediate nodes, and the destination node.

Cain does not specifically disclose policies associated with the links of the paths, wherein each link is associated with two connecting nodes, wherein the policies are executable statements processed at a routing module the routing module that evaluates the policies associated with currently available links of the paths when a data packet is received and is to be routed though one of the currently available links; wherein the

system is processed by at least one of a cache accelerator, a router, a gateway, a firewall, a network hub, a network switch, a network bridge, or a customized application, and wherein the routing module processes on the entry node, the intermediate nodes, and the destination node.

Ash discloses policies associated with the links of the paths, wherein each link is associated with two connecting nodes (see Ash col.2, lines 65-67 to col.3, lines 1-5, receive the packets select routes based the load state of the links in the network; also see col.5, lines 15-23, lines 41-55 determining the links having the bandwidth capacity for the determine class of service, the recipient router such as router 12-1, to 12-3 using the same policy to determine the route in the network.

Nar discloses, wherein the policies are executable statements processed at a routing module the routing module that evaluates the policies associated with currently available links of the paths when a data packet is received and is to be routed though one of the currently available links (see Nar col.4, lines 56-67; col.5, lines 1-8, each router calculate and selects the next hop for forwarding packet based on criteria such as network load, when the router calculate and select the available next hop, the router using the SPT algorithm and criteria such as network load, the router implement the SPT algorithm and the criteria, the SPT algorithm and the criteria are executable); wherein the system is processed by at least one of a cache accelerator, a router, a gateway, a firewall, a network hub, a network switch, a network bridge, or a customized application (see Nar col.2, lines 65-67, router) and wherein the routing module

processes on the entry node, the intermediate nodes, and the destination node (see Nar col.2, lines 65-67, implement at each router).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to combine the teaching of Ash and Nar to the method of Cain because they are analogous arts. A person would have been motivated at the time the invention was made to add the evaluating the calculating and selecting next hop at each router of Ash and Nar to the invention of Cain for the purpose providing a more efficient routing method by allowing each router to chose the routing decision locally.

As regarding claim 16, Cain-Ash-Nar discloses the policies configurable based on the CDN or a data type associated with the data packet (see Ash col.2, lines 34-48). The same motivation was utilized in claim 15 applied equally well to claim 116.

As regarding claim 17, Cain-Ash-Nar discloses policies include node bandwidth utilization metrics, node load metrics, and node traffic priority metrics (see Cain col.4, lines 20-25).

As regarding claim 18, Cain-Ash- Nar discloses the entry node and each of the intermediate nodes of the routing table processes the routing module when the data packet is received (see Nar col.2, lines 65-67). The same motivation was utilized in claim 15 applied equally well to claim 18.

Claims 10, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cain, Ash and Nar as applied to claim 9, 15 above and further in view of Yoshihara et al (us 2002/0040396) (hereinafter Yos).

As regarding claim 10, Cain-Ash-Nar discloses the invention as claims in claim 9 above, however Cain-Ash-Nar does not disclose notifying by the receiving node, remaining intermediate nodes for any modifying that occurs.

Yos teaches notifying by the receiving node, remaining intermediate nodes within the routing table for any modifying that occurs (see Yos par 0092).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to combine the teaching of Yos to the method of Cain-Ash-Nar because they are analogous arts. A person would have been motivated at the time the invention was made to add the notifying the remaining intermediate nodes to the invention of Cain-Ash-Nar for the purpose providing a more efficient routing method by allowing the routers to know the condition of the network.

As regarding claim 19, Cain-Ash-Nar discloses the invention as claims in claim 15 above, however Cain-Ash-Nar does not disclose notifying by the receiving node, remaining intermediate nodes for any modifying that occurs.

Yos teaches notifying by the receiving node, remaining intermediate nodes within the routing table for any modifying that occurs (see Yos par 0092).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to combine the teaching of Yos to the method of Cain-Ash-Nar

because they are analogous arts. A person would have been motivated at the time the invention was made to add the notifying the remaining intermediate nodes to the invention of Cain-Ash-Nar for the purpose providing a more efficient routing method by allowing the routers to know the condition of the network.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DUYEN DOAN whose telephone number is (571)272-4226. The examiner can normally be reached on M-F 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on 571 272 3964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/DUYEN DOAN/
Examiner, Art Unit 2452